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Trimen's Journal of Botany. June. W. G. Smith, A new species of *Xerotus X. sanguineus*. J. G. Baker, New Ferns from the Andes of Quito. A. W. Bennett, Review of the British species of *Polygala*. E. M. Holmes, The Cryptogamic Flora of Kent. Several extracts and excellent abstracts, together with a notice of the Botanical Garden at Copenhagen, and the titles of articles in botanical journals close the number.

Flora, No. 13. Dr. George Winter, Lichenological notices (continued in No. 14). F. v. Thümen, Notes on "Mycotheca Universalis." Nö. 14. Emil Godlewski. Is the product of assimilation in Musaceæ (the Banana tribe) oil or starch? (Answer, "Everything shows that the product of assimilation in the species of *Musa* and *Strelitzia* is not oil, as Briosi states, but starch, just as in other plants.") Nylander. Additions to European Lichenography (continued in No. 15). No. 15. M. Gandoger, New Roses in South Eastern France, Fritz Müller, a Letter from Brazil (noticed elsewhere).

Botanische Zeitung, No. 21. G. Kraus, The Occurrence of Inulin in other plants than Compositæ. (The writer has detected Inulin in the allied orders Campanulaceæ and Lobeliaceæ [which, by the way, have been united as tribes under one order by Bentham and Hooker], in Goodeniaceæ and Stylideæ.) No. 22. Dr. Brefeld, On the Entomophthoræ (an order of Fungi) and their allies (continued in 23). No. 23, Dr. G. Haberlandt, On the Origin of Chlorophyll Granules in the Germ-Leaves of *Phaseolus vulgaris*. No. 24, conclusion of the preceding article by Haberlandt. "I believe that I have now shown that true chlorophyll granules can arise, as v. Mohl pointed out, by the enveloping of starch granules with colored protoplasm." No. 25, Professor Schenk, On the Relations of Structure of Fossil Plants. Reports of Societies.

ZOÖLOGY.¹

THE BRANCHIÆ OF THE EMBRYO PIPA. — In *Nature* for April 5, 1877, is an interesting article, author not stated, upon The Development of Batrachians without Metamorphosis. On page 492 occurs the following passage: "The young of *Pipa Americana* [the Surinam toad] come forth from the eggs laid in the cells on their mother's back, tailless and perfectly developed. In them, likewise, no one has yet detected branchiæ." Two points here made are not in accordance with the observations of the late Prof. Jeffries Wyman, as recorded in the *American Journal of Science and Arts*, 1854, second series, vol. xvii. pp. 369-374.

Wyman states that the eggs are transferred by the male to the back of the female, which presents "a uniform surface throughout;" "their presence excites increased activity in the skin, it thickens, and is gradually built up around each egg, which it at length incloses in a well-defined pouch."

¹ The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.

On pages 370 and 371 he figures and describes the earlier embryos as having "three branchial appendages on each side of the head. In a later stage the external branchiæ had disappeared, but a small branchial fissure was detected on each side of the neck, and within this on each side a series of fringed branchial arches."

Wyman's figures are evidently enlarged, and he gives no measurements of the embryos. But his figures and descriptions are explicit, and I am not aware that any statement by him has ever been found to be incorrect.

In view, however, of the passage above quoted from *Nature* I have endeavored to obtain confirmation of Wyman's statement. On examining two embryos from cells upon a Pipa presented to me by Dr. J. B. S. Jackson, I found them very ill preserved. They measured fourteen mm. from tip to tip, and I could find no trace of branchiæ internal or external. I then suggested to Dr. Jackson an examination of some better-preserved examples in the Warren Anatomical Museum of the Medical College of Harvard University. The examination was made by Mr. C. S. Minot, who reports as follows:—

"I have examined two eggs from the back of the Pipa, and found the embryos a little more advanced than that figured by Professor Wyman; they are between twelve and thirteen mm. in length. The gills were partly absorbed, but a single slit with the gills still projecting could be readily seen on each side at the back of the head. I could not make a more detailed examination, as the eggs were not well enough preserved."

We may conclude, then, pending the extended examination of a series of perfectly preserved embryos, that the Pipa does possess external branchiæ at a certain period before hatching. — BURT G. WILDER.

MAMMALS NEW TO THE UNITED STATES FAUNA. — I am desired by Dr. J. C. Merrill, U. S. A., to record the capture by him at Fort Brown, Texas, of two species of Mammals not previously found in the United States. One of these is the *Felis yaguarundi*, and the other is a species of *Nasua*.

Felis yaguarundi was introduced into our fauna in 1857, by Professor Baird, in his Mammals of North America, his material consisting of a skull collected by Dr. Berlandier at Matamoras, Mexico. It was then first recognized as an inhabitant of the valley of the Lower Rio Grande, but it is only now actually taken in United States territory. It is described as larger than the common house-cat, and more elongated in all its proportions, with the tail as long as the body exclusive of the head, and the prevailing color a continuous grizzled brownish-gray without any spots. An extended account is given in the Mexican Boundary Report, vol. ii. pt. ii., page 12 (1859). The skin which Dr. Merrill has transmitted to the Smithsonian was obtained from a Mexican who shot the animal a few miles from Fort Brown, Texas. "Last summer," writes Dr.

Merrill, "while duck shooting at a lagoon about six miles from the fort, I saw one of these cats come out of some thick chaparral and run across an open resaca, within seventy-five yards of me. The long tail and gray color were distinctly seen and unmistakable."

The occurrence of the *Nasua* is particularly interesting, as it adds not only a species but a genus and family of mammals to our fauna. Dr. Merrill kept the coati some time in confinement, but finally killed it, and transmitted the specimen to the Smithsonian. It is unfortunately not in very good order, having been attacked by insects, but will answer for identification. It is probably the species referred to on page 22 of the Mexican Boundary Report as "*Nasua fusca*," under which name the Berlandier MS. speaks of a coati as common in Tamaulipas. Dr. Merrill took the following description from the living animal :—

Female. Nose to base of tail, about twenty-two inches ; tail vertebrae, twenty ; tail with hairs, twenty-one. General color, grayish yellow, the hairs lighter at the ends ; shoulders and other parts yellowish-white ; tail brownish-yellow, darker towards the tip, in form very thick at the base and gradually tapering ; feet black, five-toed, claws long ; ears small and rounded ; snout long, slender and flexible, extending one and one half inches beyond upper incisors ; top of head yellowish ; three white spots, one above, another beneath, and a third three fourths of an inch behind, the eye ; terminal inch and a half of snout with whitish hairs ; rest of face brownish ; nose black. She is quite tame, is a great mouser, and makes a very amusing pet." — ELLIOTT COUEŚ, Washington, D. C.

SPONTANEOUS ADAPTATION OF COLOR IN THE LIZARD. — The lizards are of great beauty and variety in Florida, and are generally not easily alarmed, and so tame as to afford good opportunity for observing their characters and habits. Their having the capacity of, chameleon-like, changing color, has, I believe, been questioned. Since my residence here, I have had ample means of determining the point, and can positively state that they possess the power to which I have reference in a remarkable degree ; indeed I was unprepared for the extreme development of this curious gift, which they spontaneously exhibit. For instance, I have seen a small yellowish-brown lizard, on quitting the ground, instantly assume the dull gray hue of the weather-beaten fence-rail it glided upon and along. Passing under some olive-tinted foliage, it would next adopt that color, to be succeeded by a full bright green of emerald-like glow, as it reached and rested underneath the sprays of grass and other leaves of corresponding shade. The original yellowish-brown color would again be assumed on the lizard returning to the ground. Each of the changes mentioned appeared to be almost instantaneous, and the entire series could not have occupied much more than one quarter of a minute of time.

At Santa Fé Lake, in Alachua County, these interesting little creatures are uncommonly abundant. They frequently enter dwellings, bask-

ing on the window-sill or gliding like a sunbeam along the back of a chair; and some are so tame that they permit themselves to be stroked with a straw. — HENRY GILLMAN, Waldo, Florida.

SUPPOSED DEVELOPMENT OF PICKEREL WITHOUT FECUNDATION. — March 15, 1875. The boys brought in some brook pickerel. One was swollen with spawn, weight of fish 521 grains; of spawn freed from membrane, 127 grains, 117 spawn weighed 5 grains. Therefore whole number about 2972.

This spawn was amber colored, and the eggs were in general translucent. Occasionally an egg could be seen which was slightly smaller than the rest, and clouded, and some few were opaque. These eggs, thus marked, presented different appearances under the microscope. I have mislaid the notes and drawings that I took at the time, but can furnish the following facts from memory. The clouded eggs showed a different development from the others, there being a greater difference in size of the cells, and occasionally the cells arranged in lines. Some of the opaque eggs had evidently developed in the line of the fecundated egg, as the cells were arranged in the form of a curled fish, the line of the back being well defined, the line of the belly and sac poorly or not at all defined, while there was a concentration of cells about the locality of the eye. I cannot say that I saw a young fish, for I did not, but I saw what I considered sufficient to interpret as development to a certain degree, without fecundation.

I was so much surprised, that for a time I doubted my own eyesight, and called my brother to look. He saw what he called a young fish in the egg, and so I was convinced, but I had not the courage to send my observations to men of science.

This next spring I will try and procure some fresh specimens, and if my observations can be verified, as I doubt not but that they can be, I will send them to you.

I should not consider this memorandum worthy of being forwarded to you, were it not for the encouragement of your letter, and I am fully as aware that such incompleteness can be of little value to science. Yet I am somewhat familiar with the microscope, and have studied the ovary of young calves, both in a fresh and injected state, and have had sufficient experience to eliminate imagination from my results, and recognize facts. I therefore have confidence that I saw what I have so imperfectly outlined, and I hesitate to ask others to believe, on account of their wonderful nature, that there can be such a development without fecundation in a vertebrate. — E. LEWIS STURTEVANT, South Framingham, Mass., July 8, 1877. (Communicated by the Smithsonian Institution.)